DEPARTMENT OF DEFENSE

JOINT AUDIT REPORT

JOINT CONTRACTING FOR DEPOT MAINTENANCE OF SECONDARY ITEMS

Report No. 98-085 **March 4, 1998**

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Acronyms

CAGE	Commercial and Government Entity
FSC	Federal Supply Class
ICP	Inventory Control Point
NSN	National Stock Number

March 4, 1998

MEMORANDUM FOR UNDER SECRETARY OF DEFENSE
(ACQUISITION AND TECHNOLOGY)

SUBJECT: Audit Report on Joint Contracting for Depot Maintenance of Secondary Items (Report No. 98-085)

We are providing this audit report for review and comment. This audit was requested by the Joint Logistics Commanders, and was performed as a joint audit effort under the auspices of the Joint Logistics Audit Planning Group. The Naval Audit Service led this audit effort with participation from the DoD Inspector General and Army and Air Force audit organizations.

The Under Secretary of Defense (Acquisition and Technology) did not provide comments on the draft report. DoD Directive 7650.3 requires that all recommendations be resolved promptly. Therefore, we request that the Under Secretary of Defense (Acquisition and Technology) provide comments on the final report by May 4, 1998.

We appreciate the courtesies extended to the audit team. Questions on the audit should be directed to Ms. Barbara M. Cobble, Naval Audit Service, at (703) 604-2027 (DSN 664-2027) (bcobble@audit.navy.mil) or Mr. Luther Bragg, Naval Audit Service, at (703) 604-0739 (DSN 664-0739) (lbragg@audit.navy.mil). The audit team members are listed on the inside back cover. See Appendix F for report distribution.

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DoD Joint Logistics Audit Planning Group

Report No. 98-085 **March 4, 1998**
(Project No. 7LD-5027)

Joint Contracting for Depot Maintenance of Secondary Items

Executive Summary

Introduction. This audit was requested by the Joint Logistics Commanders and was performed as a joint audit effort under the auspices of the DoD Joint Logistics Audit Planning Group. The Naval Audit Service led this effort, with participation from the DoD Inspector General and Army and Air Force audit organizations. Joint contracting for depot-level maintenance involves having a contractor perform maintenance for more than one DoD component under a single contract administered by just one DoD component. DoD guidance emphasizes the desirability of joint contracting agreements between the Services to achieve the most cost-effective depot maintenance possible. The reviewed data files contained 5,643 separate maintenance contracts valued at $1.8 billion that were open as of the second quarter of FY 1997.

Objectives. The objectives of the audit were to determine opportunities for combining existing depot maintenance contracts into joint contracts, and to identify savings from increased use of joint contracts for depot maintenance.

Audit Results. The Services did not identify and initiate actions to use joint contracts for depot-level maintenance. We determined that at least 3,479 contracts, valued at $1.2 billion, in our audit universe, involving multiple Services using the same repair facility or supplier, were candidates for joint contracting. Opportunities for joint contracting may also exist for repair of similar items. Since there were no current or historical examples of joint contracting agreements, we could not identify specific savings. However, we believe many opportunities for administrative efficiencies and economies-of-scale cost savings exist.

Summary of Recommendations. We recommend that the Under Secretary of Defense (Acquisition and Technology) expand DoD guidance relative to joint contracting to better facilitate such contracting, and charter an Integrated Product Team to develop a joint contracting process. In addition, we recommend that the Deputy Under Secretary of Defense (Acquisition Reform) integrate a joint contracting training module into course curricula to ensure that personnel receive joint contracting training.

Management Comments. Comments were not received to a draft of this report. Therefore, we request that the Under Secretary of Defense (Acquisition and Technology) provide comments on the final report by May 4, 1998.

Table of Contents

Part I - Audit Results

Audit Background

This audit was requested by the Joint Logistics Commanders and was performed as a joint audit effort under the auspices of the Joint Logistics Audit Planning Group. The Joint Logistics Commanders asked the Group to determine whether there are opportunities for joint contracting in depot maintenance.

Depot-level maintenance represents the most extensive level of maintenance and entails repair, rebuilding, and major overhaul of principal end items (e.g., aircraft, ships, and tanks), parts, assemblies, and subassemblies. It also includes limited manufacture of parts, modifications, reclamation, technical support, and testing, as well as software maintenance.

DoD spends about $11 billion to $14 billion annually for depot-level maintenance. Projected costs for FYs 1996 through 2001 exceed $74 billion. Of the total DoD estimated cost of $11.5 billion for FY 1997, about $7.0 billion was for work to be performed in Government-operated facilities (organic maintenance) and $4.5 billion was for work to be performed at privately operated facilities (contract maintenance). Contract maintenance includes depot-level maintenance of principal end items and secondary items (reparable components, minor end items, and repair parts). This audit focused on contract depot-level maintenance for Service-managed, secondary reparable items.

DoD 7000.14-R, "DoD Financial Management Regulation," March 16, 1993, requires each DoD component to report depot maintenance workloads and identify the portions that are inter-service and joint contract. Inter-service represents maintenance performed by the organic (Government-owned) activity of one Service in support of an activity from another Service. Joint contracting is maintenance performed by a contractor for more than one DoD component under a single contract administered by just one DoD component. For FY 1996, DoD reported $423 million in inter-service and joint contracting depot maintenance and repair work. Of this amount, $417 million (98.6 percent) was organic maintenance and $6 million (1.4 percent) was contract maintenance. (See Appendix E for definitions of key terms.)

A related key goal of the DoD is to reduce the operating and support costs for its weapon systems and equipment. Joint contracting is in keeping with this goal and Goal 9 of the "DoD Acquisition" National Performance Review, DoD Reinvention Impact Center, to eliminate the layers of management through streamlined processes while reducing the DoD acquisition and related workforce by 15 percent by the year 2000.

Audit Objectives

The objectives of the audit were to:

- Determine opportunities for combining existing depot maintenance contracts into joint contracts.

- Identify savings from increased use of joint contracts for depot maintenance.

See Appendix A for a discussion of the details on scope, methodology, management control program, and related prior audit coverage.

Joint Contracting

The Services did not identify and initiate action to use joint contracts for depot-level maintenance of secondary items. We determined that at least 3,479 contracts in our audit universe of 5,643 contracts involved multiple Services using the same repair facility or supplier. The 3,479 contracts were candidates for joint contracting. Opportunities for joint contracting may also exist for repair of similar items. While Defense policy required establishment of joint contracting maintenance arrangements, guidance did not provide specific criteria for identifying joint contracting opportunities, and did not establish processes to accomplish joint maintenance contracts. As a result, the Services missed opportunities for administrative efficiencies and economies-of-scale cost savings.

Policies and Procedures

The Federal Acquisition Regulation, Part 37, "Service Contracting," defines a service contract as a contract that directly engages the time and effort of a contractor whose primary purpose is to perform an identifiable task (such as maintenance, overhaul, and repair) pertinent to equipment, supplies, or systems. Contracts awarded to a single source without the benefit of competition must be justified in accordance with Part 6, Subpart 6.3, "Other than Full and Open Competition."

DoD Directive 4151.18, "Maintenance of Military Materiel," August 12, 1992, establishes policy and assigns responsibility for the performance of DoD materiel maintenance, including maintenance of hardware, equipment, and software, for both organic and contract types of maintenance. It is DoD policy that inter-service (involving multiple Services), intra-service (within the same Service), and joint contracting maintenance support arrangements shall be established and executed to achieve the most cost-effective depot maintenance possible, consistent with readiness requirements of the Services.

Use of Joint Contracts

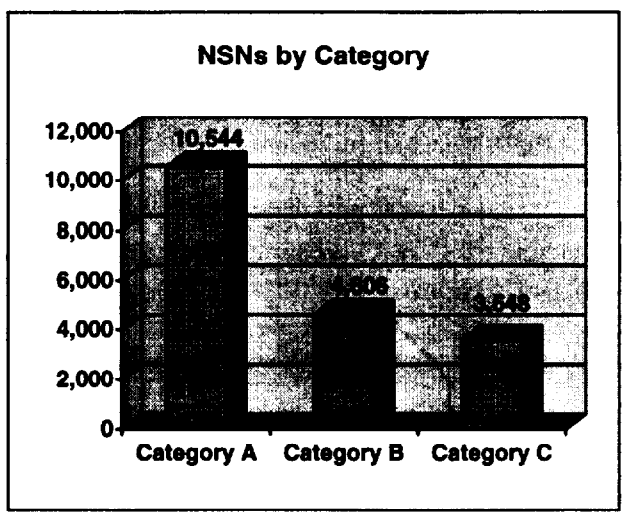
Existing Maintenance Contracts. The Services did not identify and initiate action to use joint contracts for depot-level maintenance of secondary items. We obtained data files from the Services' Inventory Control Points (ICPs) for depot-level maintenance contracts that were open during the second quarter of FY 1997. We identified seven contracts where one Service reported using another Service's repair contract. However, these seven contracts related to the repair of items used by more than one Service that required materiel support rather than joint

contracting. Thus, the Services' data did not contain any cases of joint contracting. We interviewed ICP personnel, including contracting officers, engineers, equipment specialists, item managers, and program managers. ICP personnel were not aware of their use of any joint contracts for depot-level maintenance of secondary items.

Consolidation Opportunities. Opportunities exist to consolidate repair requirements for two or more Services on joint contracts. We analyzed the Services' depot-level maintenance contracts for commonalities and identified three categories of criteria where joint contracting opportunities may exist:

> *Category A - Same repair facility:* Services separately contracting with the same repair facility.
>
> *Category B - Same supplier:* Services separately contracting for repairs of items that are supplied by the same contractor (manufacturer).
>
> *Catagory C - Similarity of items:* Services separately contracting for repair of items that may be similar enough to warrant a joint contract (the items have the same Federal Supply Class (FSC), same item name, and similar standard price).

The data files provided by the ICPs contained 5,643 separate contracts, valued at $1.8 billion, for repair of 18,698 items with separate national stock numbers (NSNs). We determined that the 5,643 contracts were awarded to 1,791 separate contracting entities. By applying the described criteria (Categories A, B, and C), we divided the contract data files into three unique subsets matching the criteria. As shown in the chart at right, of the 18,698 NSNs, 10,544 applied to Category A, 4,606 applied to Category B, and 3,548 applied to Category C.



Consolidation opportunities exist in Category A (same repair facility) and Category B (same supplier). We also noted there was the potential for joint contracts related to Category C (similarity of items).

Same Repair Facility. Instances where two or more Services already have repair contracts at the same repair facility represent the best opportunity for joint contracting. We used the Commercial and Government Entity (CAGE) codes to identify repair facilities. By comparing CAGE codes among contracts in the data files, we determined that 308 of the 1,791 repair facilities had repair contracts with multiple Services (a separate contract for each Service). The 308 repair facilities account for 2,554 contracts, valued at $860 million, or about 45 percent of all repair contracts in the data files. (Appendix B lists the CAGE codes, name of repair facility, location, and number of contracts awarded for instances where at least five contracts were awarded to the same repair facility.) To test the feasibility of joint contracting, we reviewed 20 "scenarios" (41 contracts). Hereafter in this report, scenarios refer to instances with at least two repair contracts in more than one Service.

We determined that multiple Services using the same repair facility under separate contracts represent joint contracting opportunities. The following Tables 1 through 3 illustrate three examples of such joint contracting opportunities from our audit sample:

Table 1
Example 1 of Potential Joint Contract for Same Repair Facility

Repair Facility: GEC-Marconi Electronic Systems Corporation, Wayne, NJ
Service Activities: Army Communications-Electronics Command and Naval Inventory Control Point

Details on Contracts				
Service	Contract Number	Length of Contract	Dollar Value	Weapon System
Army	DAAB0795DA013	1 year with two 1-year options	$4.9 million	AN/ASN-128 Light-weight Doppler System and AN/ASN-137 Improved Lightweight Doppler System
Navy	N0038395D004J	3 years with two 1-year options	$3.5 million	AN/APN-187 Doppler Velocity Altimeter Radar Set

Items on Contracts		
Contract Number	NSN	Item Name
DAAB0795DA013	5998-01-281-1950	Circuit Card Assembly
	5998-01-281-1951	Circuit Card Assembly
	5841-01-318-0654	Receiver-Transmitter, Radar
N0038395D004J	5841-00-168-3486	Computer, Tracker, FR
	5841-00-168-3487	Control Indicator
	5841-00-168-3489	Receiver-Transmitter
	5841-00-168-7683	Antenna, Microwave
	5841-00-168-7707	Electronic Component
	5841-00-168-7896	Power Supply
	5998-00-168-7894	Circuit Card Assembly
	5998-01-346-5378	Circuit Card Assembly

Table 2
Example 2 of Potential Joint Contract for Same Repair Facility

Repair Facility: Moog Inc. Aircraft Group, Torrance Operations, Torrance, CA
Service Activities: Naval Inventory Control Point and Oklahoma City Air Logistics Center

Details on Contracts				
Service	Contract Number	Length of Contract	Dollar Value	Weapon System
Navy	N0038395G002H	2 years	$3.0 million	Components of Flight Control System for F/A-18 Aircraft
Air Force	F3460195D0366	1 year with two 1-year options	$1.0 million	Hydraulic Motor/ Actuator for F-16 Aircraft

Items on Contracts		
Contract Number	NSN	Item Name
N0038395G002H	1650-00-418-3158	Servo Valve, Hydraulic
	1650-01-089-6802	Housing-Sleeve-Slid
	1650-01-089-6804	Housing-Sleeve-Slid
	1650-01-253-5836	Servo Cylinder
	1650-01-253-5837	Servo Cylinder
	1680-01-125-8905	Transmission, Mechanical
	1680-01-125-8906	Transmission, Mechanical
	1680-01-125-8907	Transmission, Mechanical
	1680-01-125-8909	Transmission, Mechanical
	1680-01-114-0225	Transmission, Mechanical
	6695-01-125-8859	Transducer, Motional
	6695-01-301-0814	Transducer, Motional
F3460195D0366	1650-01-302-3404	Hydraulic Motor
	1650-01-308-0839	Hydro-Mechanical Actuator
	1650-01-261-8078	Hydro-Mechanical Actuator

Table 3
Example 3 of Potential Joint Contract for Same Repair Facility

Repair Facility: Litton Systems Inc., Electron Devices Division, Williamsport, PA
Service Activities: Army Missile Command and Sacramento Air Logistics Center

Details on Contracts				
Service	Contract Number	Length of Contract	Dollar Value	Weapon System
Army	DAAH0196C0232	1 year with 1-year option	$6.0 million	PATRIOT Crossed Field Amplifier assemblies
Air Force	F0460696D0078	1 year with two 1-year options	$6.7 million	Traveling Wave Tube applicable to AN/FPS-108

Items on Contracts		
Contract Number	NSN	Item Name
DAAH0196C0232	5960-01-110-2668	Electron Tube
F0460696D0078	5960-01-011-6358	Electron Tube

The preceding examples present excellent opportunities to consolidate requirements into one contract for the repair facility. The contracts were awarded in the same fiscal year, cover similar periods of time, and were for repair of similar types of items. For Example 1, both the Army Communications-Electronics Command and the Naval Inventory Control Point had previous contracts with this same repair facility awarded in FY 1991. Therefore, the Army and Navy missed two prior opportunities to consolidate requirements.

In addition to identifying opportunities for consolidating repair requirements of multiple Services with the same repair facilities, we identified opportunities for intra-service consolidations. ICPs within the same Service had prepared separate depot maintenance contracts with the same repair facilities. Table 4 provides an example:

Table 4
Example of "Intra-Service" Consolidation Opportunities

Contract No.	CAGE	ICP/Location
F3460196D0354	017N4	Oklahoma Air Logistics Center
F4160896D0847	017N4	San Antonio Air Logistics Center
N0010492GA016	017N4	Naval Inventory Control Point (Mechanicsburg office)
N0038392GK201	017N4	Naval Inventory Control Point (Philadelphia office)

From the contract data provided by the ICPs, we determined that 1,926 contracts were awarded to the same repair facilities by multiple intra-service ICPs. Table 5 shows the intra-service opportunities for consolidating depot maintenance repair contracts with the same repair facility:

Table 5
Intra-Service Opportunities for Consolidating Contracts

Service	No. of CAGEs	No. of Contracts
Army	11	63
Navy	116	810
Air Force	136	1,053
Total	263	1,926

Same Supplier. The second category reviewed includes instances where at least two different Services had existing depot maintenance contracts that contained items supplied by the same contractor and were repaired by that supplier or an alternate repair facility. Due to time constraints, we excluded from our analysis all items having multiple original supplier CAGE codes. There were 925 contracts, valued at $312 million, remaining after the exclusions. (Appendix C lists the CAGE codes, name of supplier, location, and number of contracts awarded where at least three contracts were for repair of items supplied by the same contractor.) To test the feasibility of combining these contracts, we reviewed 11 scenarios (49 contracts) in which items with common supplier CAGE codes were being repaired by at least 2 Services under separate contracts.

We determined that items supplied by the same contractor provide opportunities for joint contracting. Table 6 illustrates an example:

Table 6
Example of Potential Joint Contract for Same Supplier

Supplier: Tektronix Inc, Beaverton, OR

Contract Number	Repair Facility	Length of Contract	Value ($000)	Weapon System
DAAB0795DB755 (Army)	Wilcox	1 year with four 1-year options	$4,525.2	AN/FPN-66 Radar Terminal
N0010492GA094 (Navy)	Tektronix Inc.	Basic Ordering Agreement with requirements for 7 years	$110.0	General Purpose Electronic Test Equipment
F0960396M1853 & F0960397M0200 (Air Force)	Event Systems and Digicomp (Tektronix Inc. listed as potential source of repair)	Purchase Orders	$4.0 $0.4	F-15/16 Flight Simulator Terminal

As shown in Table 6, opportunities exist for joint contracting among more than two Services. The contracts in the example cover a similar time period and the items were supplied (manufactured) by the same contractor.

We concluded that the above example was an opportunity to consolidate requirements into one repair contract. In the example, we determined that under Contract A, one activity is currently paying $1,746 for the repair of a graphics terminal (7025-01-353-2481) while another activity is having this same item repaired for $450 at another repair facility. By combining Army, Navy, and Air Force requirements, Tektronix (the supplier of all the items) or the other repair facilities may be able to offer DoD significant savings on overall repair costs.

Contracts Meeting Categories A and B Criteria. From the data files, we determined that 2,015 of the 5,643 contracts (36 percent) met both criteria (same repair facility and same supplier). These instances offer the best opportunities for joint contracting -- the Services currently have separate contracts with the same company to repair items that were supplied by the same company (the repair facility and the supplier facility may not be at the same location).

Similarity of Items Being Repaired. The last category for identifying joint contracting opportunities involves items with similar characteristics. We used the FSC, item name, and standard price to identify items for review. To determine similarity, we requested technical data and asked Service and DoD Inspector General engineers for their input. There were 2,164 contracts, valued at $591 million, having 3,548 items from which to identify items meeting similarity criteria. To test the feasibility of joint contracting, we reviewed 38 scenarios (81 contracts) with the similarity criteria. (Appendix D provides a listing of instances in which at least 10 similar items were being repaired in the same FSC. Other similar items also exist in Categories A and B.) Table 7 illustrates a joint contracting opportunity based on same FSC, same item name, and similar standard prices, involving the Army (Army Communications-Electronics Command) and Navy (Naval Inventory Control Point):

Table 7
Example of Potential Joint Contract for Similar Items

Service	Original Equipment Manufacturer	NSN	Item Name	Standard Price
Army	RCA Corporation	5960-01-030-5345	Electron Tube	$15,982
Navy	Texas Instruments	5960-00-140-1600	Electron Tube	$15,790

The above example was identified by DoD Inspector General engineers as a candidate for joint contracting. While other instances of joint contracting for the repair of similar items may exist, such instances would each require a detailed engineering analysis on a case-by-case basis to determine the feasibility of consolidating.

Sample Results. As shown in the various tables and discussions above, the Army, Navy, and Air Force are not identifying and acting on multiple opportunities to consolidate their depot-level requirements into joint contracts. We selected a judgmental sample of 69 scenarios (including all 3 categories) and determined that 35 of 69 scenarios were candidates for joint contracting consideration. The results indicated that items with the same repair facility (Category A) and the items coming from the same supplier (Category B) were prime candidates for consolidating, while similar items being repaired (Category C) can also be candidates for consolidation but not as frequently. The primary reasons scenarios were not candidates for consolidation were: awarding sole source contracts (17 scenarios discussed below), developing organic

(government-operated) capabilities (10 scenarios), and phasing out items (4 scenarios). Sample results are summarized in Table 8, while details on each of the 69 scenarios are available upon request.

Table 8
Sample Results Regarding Consolidation Opportunities

Criteria	Contract Scenarios	No. of Contracts	Value ($ Millions)	Consolidation Opportunities	
				Yes	No
A	20	41	$142.4	18	2
B	11	49	$246.2	9	2
C	38	81	$245.3	8	30
Total	69	171	$633.9	35	34

Impact of Sole Source Contracts on Joint Contracting Opportunities

In our audit sample, 140 of 171 contracts were awarded sole source. We reviewed justification and approval sections of contracts and determined that DoD contracting officials complied with the Federal Acquisition Regulation, Part 6, Subpart 6.3. However, we did not verify the accuracy of the data supporting the justifications. The most common reasons for awarding contracts sole source were lack of technical data, highly specialized equipment, trained personnel, test equipment, or proprietary data.

We evaluated the extent to which sole sourcing of selected maintenance contracts would limit opportunities for joint contracting. For Category A (same repair facility), the practice of awarding maintenance contracts to sole source contractors does not limit joint contracting opportunities, since the Services are using the same repair facilities. For Category B (same supplier), the practice of using sole source contracts limited joint contracting opportunities in 2 of the 11 scenarios reviewed. For both of these scenarios, the Navy awarded sole source contracts to repair facilities that were not listed as competitive sources for the corresponding Air Force contracts. While the Navy typically awarded repair contracts to the original equipment manufacturer, the Warner Robins Air Logistics Center established an aggressive program for source development and selection. This program should also increase sources of repair.

For Category C (similarity of items), the practice of using sole source contracts limited joint contracting opportunities in 15 of the 38 scenarios reviewed. In 4 of the 15 scenarios, individual Services awarded sole source contracts to repair facilities that were not listed as sources for the corresponding competitive contracts in other Services. For the remaining 11 scenarios, separate Services awarded sole source contracts to different repair facilities, thereby precluding opportunities for joint contracts.

Expanding Published Guidance and Creating Processes

DoD Directive 4151.18 encourages joint contracting by indicating that joint contracting maintenance arrangements should be established to achieve the most cost effective depot maintenance possible. However, DoD guidance is not specific enough to enable the Service ICPs to achieve such joint contracting. Contracting and maintenance personnel use some general criteria when combining secondary items on depot maintenance contracts (i.e., same weapon system, same manufacturer, similar technology, and age of equipment being repaired). At Service ICPs, we reviewed procedures for combining reparable items on depot maintenance contracts. ICP personnel used various criteria for combining items on maintenance contracts but did not consider combining requirements for other Services and in some cases intra-service requirements. This criteria included weapon system, manufacturer, or equipment type. To accomplish combined depot-level maintenance requirements, more specific guidance is needed.

To achieve joint contracting for depot-level maintenance, a process must be in place that will provide acquisition and logistics personnel the necessary information to effectively implement the policy guidance. Communications and procedures for interaction will be necessary for successful joint contracting efforts. An effective approach to encouraging implementation and monitoring would be establishing an integrated team of representatives from the acquisition and logistics community to develop the applicable processes. Financial planning and resource management associated with the maintenance of secondary item inventories is another integral part of the process. To ensure financial policies and accounting procedures facilitate joint contracting, the Comptroller community should be a part of the team. These processes could affect personnel with major management commands, ICPs, and/or program offices. To eliminate barriers and provide broad-based understanding, core competency training for contracting should be expanded to include joint contracting.

Potential Efficiencies

Opportunities exist for combining requirements among the Services and establishing joint contracts for depot-level maintenance of secondary items. The 2,554 contracts in which multiple Services were using the same repair facility and 925 contracts in which multiple Services were using the same supplier were prime candidates for joint contracting opportunities. In addition, the 2,164 contracts that involved multiple Services having similar items being repaired could also be considered for joint contracting.

We reviewed existing contracts to determine opportunities that could affect future contracts. Our identification of opportunities for combining requirements does not intend that current contracts be canceled and that the Services incur the associated termination costs. However, annual renewal options would not have to be exercised for future requirements, and future requirements could be combined.

A Logistics Management Institute report, "Consolidation of DoD Inventory Control Points Under the Defense Logistics Agency," September 1997, addressed the consolidation of DoD ICPs and identified potential process improvements that could produce savings. The first initiative was contracting methodology, which was identified as the most significant. The report estimated a 2- to 6-percent savings for direct and indirect personnel costs as a result of consolidation of contracting process. In addition to ICP labor costs, the report identified savings in acquisition costs and inventory investment due to consolidating the contracting process under the Defense Logistics Agency. Depot-level maintenance contracts are a portion of this universe.

Since there were no current or historical examples of joint contracting, we were unable to document specific savings that may be attributed to joint contracting for depot-level maintenance. However, as shown in the examples provided, materiel managers could achieve efficiencies through effective use of joint contracting. We would expect infrastructure reductions related to direct and indirect personnel, lower repair prices, and savings could occur in contract administration costs.

Key goals of DoD and the Services are to reduce operating and support costs for weapon systems and equipment. Joint contracting for depot-level requirements can help achieve those goals while also improving the opportunity for effective competition, and could identify the best practices for complementing depot-level maintenance. Monitoring and tracking the results will also provide a basis for considering the application of joint contracting to principal end items and other logistics processes.

Recommendations

A. We recommend that the Under Secretary of Defense (Acquisition and Technology):

1. Expand DoD guidance relative to joint contracting to include:
   a. Policy guidance for combining requirements for repairs to be completed by the same contractor.
   b. Criteria to identify cases where sufficient similarity exists to warrant further analysis to determine if joint contracting could be feasible. At a minimum, the criteria should contain the same supplier/manufacturer and a combination of the same Federal Supply Class, item name, and similar standard price.

2. Charter an Integrated Product Team to develop a joint contracting process for depot-level maintenance contracts. The Integrated Product Team should include the Office of the Secretary of Defense contracting and comptroller personnel, the Services' contracting and logistics personnel, and Defense Logistics Agency contracting personnel. The objectives of the team should include requirements to:
   a. Establish and execute joint contracting maintenance agreements to achieve the most cost-effective depot maintenance possible.
   b. Ensure joint contracting is used when DoD criteria are met consistent with readiness of the Services.
   c. Design communications processes for use by the Services to exchange information necessary to accomplish joint maintenance contracts.
   d. Establish performance reporting and measurements that monitor and track results of joint contracts in terms of support and costs.

B. We recommend that the Deputy Under Secretary of Defense (Acquisition Reform) integrate a joint contracting training module into course curricula to ensure that personnel receive joint contracting training. Joint contracting training should include DoD criteria for identifying candidates for joint depot maintenance contracts as well as procedures for accomplishing joint depot maintenance contracts.

Management Comments Required

The Under Secretary of Defense (Acquisition and Technology) did not respond to the draft of this report. We request the Under Secretary of Defense (Acquisition and Technology) provide comments on this final report.

Part II - Additional Information

Appendix A. Audit Process

Scope and Methodology

We reviewed 171 contracts within the Services to determine opportunities for combining existing depot-level maintenance contracts into joint contracts and to identify savings derived from the use of joint contracts for the depot maintenance of secondary items. We limited our review to secondary items. Two primary reasons drove this decision – to facilitate performance of the audit and to arrive at more probable opportunities for consolidation. However, our limitation should not be construed as a constraint on the applicability of joint contracting to depot-level maintenance for all items, including principal end items. Because there were no current or historical examples of joint contracts for depot-level maintenance, we were unable to identify specific savings attributable to joint contracting.

We requested data files from all Service ICPs containing information on depot maintenance contracts that were open during the second quarter of FY 1997. The data files we received from the Service ICPs contained 7,235 records. We analyzed these records and determined that 719 were not contract document numbers and 873 had invalid or missing data. These 1,592 contract records were not further analyzed. We did not attempt to verify the accuracy of the data files provided except to ensure that the total funds reported as obligated for depot-level repair of secondary items were reasonable.

In the absence of DoD criteria, we developed criteria to analyze the 5,643 contracts. We divided the contract data into three unique categories based on the following criteria:

Category A. Services separately contracting with the same repair facility.

Category B. Services separately contracting for repairs of items that are supplied by the same contractor (manufacturer). We limited the contracts for consideration for this criteria to NSNs having one supplier.

Category C. Services separately contracting for repair of items that may be similar enough to warrant a joint contract (the items have same FSC, same item name, and similar standard price).

From the contracts in each category (A, B, or C), we judgmentally selected depot maintenance contracts to review for joint contracting opportunities. The intent is not to cancel current contracts and incur termination costs, but to identify consolidation opportunities for future requirements.

We interviewed contracting personnel, engineers/equipment specialists, item managers, and program managers for sample contracts to assess the feasibility of combining contracts and/or specific items on depot maintenance contracts. When we determined that the repairable items on contract had no future contract requirement, we performed no further analysis on those contracts and concluded that the sample was not a potential candidate for consolidation. We determined that the sole source justifications complied with the Federal Acquisition Regulation, but we did not determine the accuracy of the supporting information. We requested technical data from the ICP personnel, when appropriate, and requested engineering assistance to determine similarity.

This economy and efficiency audit was conducted from February 1997 through October 1997. The audit was conducted in accordance with auditing standards issued by the Comptroller General of the United States and, accordingly, included such tests of internal controls as were considered necessary.

Sample Selection

The Services provided data files for open depot maintenance contracts. From the Federal Logistics Information System, we extracted the supplier CAGE code and standard price for each NSN in the data files. Our analysis of the combined data files indicated that the commonalities were repair facility CAGE, supplier CAGE, FSC, item name, and similar standard price. Our sample breakout, based on the three category criteria, is shown in the following table:

Category	No. of Scenarios	No. of Contracts
A	20	41
B	11	49
C	38	81
Total	69	171

We defined a scenario as at least two contracts in more than one Service.

Organizations and Individuals Visited or Contacted

Contacts During the Audit. We visited or contacted individuals and organizations within DoD. Further details are available upon request.

Management Control Program

DoD Directive 5010.38, "Management Control Program," August 26, 1996, requires DoD organizations to implement a comprehensive system of management controls that provides reasonable assurance that programs are operating as intended and to evaluate the adequacy of the controls.

Scope of Review of the Management Control Program. We reviewed the management control plans for each activity visited during the audit.

Adequacy of Management Controls. There were no controls in place relative to joint contracting for depot maintenance of secondary items. Consequently, no management control reviews related specifically to joint contracting were conducted. Since DoD policy was not effective at requiring activities to prepare joint contracts for depot maintenance of secondary items, there was no need for management controls.

Adequacy of Management's Self-Evaluation. Management at the Services' ICPs did not identify joint contracting for depot-level maintenance of secondary items as assessable units under the program and, therefore, did not identify or report any related material management control weaknesses.

Prior Audit Coverage

Within the last 5 years, there have been no prior audits directly related to the audit objectives.

Appendix B. Contracts With Same Repair Facility (Category A)

The following table shows the number of contracts per CAGE code for instances where at least five contracts were awarded to the same repair facility.

Repair CAGE	Name	Location	No. of Contracts
29242	Texas Aerospace Services Inc.	Abilene, TX	116
50218	International Enterprises Inc.	Talladega, AL	98
0USU9	Digicomp Technologies	Newbury Park, CA	94
59364	AlliedSignal Inc. Aerospace Equip. Sys.	Tempe, AZ	92
13499	Rockwell Collins Inc.	Cedar Rapids, IA	44
2F259	Hughes Technical Services Co.	Long Beach, CA	42
5Y609	Duotech Services Inc.	Franklin, NC	42
06481	Litton Systems Inc. Guidance & Control Sys.	Woodland Hills, CA	37
94580	Honeywell Inc. Avionics Div.	Minneapolis, MN	31
017N4	AlliedSignal Inc. Electronic Systems	Teterboro, NJ	30
98247	Canadian Commercial Corp.	Ottawa, ON (Canada)	30
73030	United Technologies Corp.	Windsor Locks, CT	29
26269	U. S. Dynamics Corp.	Amityville, NY	29
78286	Sikorsky Aircraft Corp.	Stratford, CT	28
18323	Westinghouse Electric Corp.	Cockeysville, MD	27
08748	Eldec Corp.	Lynnwood, WA	24
03538	Lockheed Martin Corp.	Syracuse, NY	23
70210	AlliedSignal Inc.	Torrance, CA	22
59211	Parker-Hannifin Corp. Aerospace Group	Irvine, CA	22
93835	Parker-Hannifin Corp.	Kalamazoo, MI	22
94987	Cubic Defense Systems Inc.	San Diego, CA	21
26512	Grumman Aerospace Corp.	Bethpage, NY	21
30331	Concurrent Computer Corp.	Fort Lauderdale, FL	21
98897	Lockheed Martin Corp.	Marietta, GA	20
94117	Lockheed Martin Corp.	Nashua, NH	20
35351	Smiths Industries Aerospace & Defense Sys.	Grand Rapids, MI	19

Appendix B. Contracts With Same Repair Facility (Category A)

Repair CAGE	Name	Location	No. of Contracts
99167	Sundstrand Aerospace	Rockford, IL	18
37695	Hughes Defense Communications Co.	Fort Wayne, IN	17
80080	Litton Systems Inc. Electron Devices Div.	San Carlos, CA	17
05991	ITT Barton	La Puente, CA	17
0DNU9	Applied Data Technology Inc.	San Diego, CA	16
81873	HR Textron Inc. Controls Div.	Valencia, CA	16
12436	GDE Systems Inc.	San Diego, CA	15
97499	Bell Helicopter Textron Inc.	Fort Worth, TX	15
34641	Instrument Specialties Co. Inc.	Euless, TX	15
06129	Raytheon Co. Electromagnetic Systems Div.	Goleta, CA	15
96214	Texas Instruments Inc. Defense Sys. & Elect.	McKinney, TX	15
5Y043	Honeywell Inc. Defense Avionics Sys. Div.	Phoenix, AZ	15
90536	Lockheed Martin Tactical Systems Inc.	Saint Paul, MN	14
15280	Litton Systems Inc. Applied Technology Div.	San Jose, CA	14
63005	Allison Engine Co. Inc.	Indianapolis, IN	14
98869	Howell Instruments Inc.	Fort Worth, TX	14
09017	Whittaker Corp. Electronic Sys. Div.	Simi Valley, CA	14
0YR38	Hewlett-Packard Co.	Clark, NJ	13
64547	AlliedSignal Inc. Aerospace Equipment Sys.	Tucson, AZ	13
88236	Communications and Power Industries Inc.	Beverly, MA	13
94697	Moog Inc.	East Aurora, NY	13
19623	Aerospace Avionics Inc.	Bohemia, NY	13
54418	Miltope Corp.	Hope Hull, AL	12
97424	Ametek Aerospace Products Inc.	Wilmington, MA	12
07690	Lear Astronics Corp.	Santa Monica, CA	12
96238	DNE Technologies Inc.	Wallingford, CT	12
97384	AAI Corp. sub of United Industrial Corp.	Cockeysville, MD	12
58078	Airtronics Inc.	Tucson, AZ	11
14482	Watkins-Johnson Co.	Palo Alto, CA	11
62983	Vickers Inc. Aerospace Marine Defense	Jackson, MS	11
11809	Banner Ind. Inc. Thompson Aircraft Tire	Miami, FL	11

Repair CAGE	Name	Location	No. of Contracts
88818	Kearfott Guidance and Navigation Corp.	Wayne, NJ	11
26055	Parker-Hannifin Corp. Gull Electronic Sys.	Smithtown, NY	10
80009	Tektronix Inc.	Beaverton, OR	10
05624	Barber-Colman Co. Aircraft Products Div.	Loves Park, IL	10
99193	AlliedSignal Inc. AlliedSignal Engines	Phoenix, AZ	10
09111	Bearing Inspection Inc.	Santa Fe Springs, CA	10
11312	Teledyne Electronic Technologies Vacuum	Rancho Cordova, CA	10
72914	Grimes Aerospace Co.	Urbana, OH	9
73293	Hughes Aircraft Co. Electron Dynamic Div.	Torrance, CA	9
89146	Litton Systems Inc. Electron Devices Div.	Williamsport, PA	9
57057	NAVCOM Defense Electronics Inc.	El Monte, CA	9
76301	McDonnell Douglas Corp.	Saint Louis, MO	9
73842	The Goodyear Tire and Rubber Co.	Akron, OH	9
89944	Kollsman Inc.	Merrimack, NH	9
79172	Wallace and Tiernan Inc.	Vineland, NJ	9
92059	Kaman Aerospace Corp.	Middletown, CT	9
33654	Howden Fluid Systems Inc.	Goleta, CA	9
04939	Lockheed Martin Corp.	Orlando, FL	9
99643	Vickers Inc. Fluid Control and Actuation Div.	Los Angeles, CA	9
29436	Harris Computer Systems Corp.	Fort Lauderdale, FL	8
46175	Peerless-Winsmith Inc.	Warren, OH	8
16331	Lockheed Martin Corp.	Orlando, FL	8
05167	Pacific Scientific Co.	Duarte, CA	8
79318	Whittaker Corp. Whittaker Controls Div.	North Hollywood, CA	8
80249	Hazeltine Corp.	Greenlawn, NY	8
06848	AlliedSignal Inc. Aerospace Equipment Sys.	South Bend, IN	8
07860	Bogue Electric Mfg. Co.	Paterson, NJ	8
09080	Logus Mfg. Corp.	West Palm Beach, FL	8
33322	Wang Federal Inc. Spares/Supplies Sales	Herndon, VA	8
94990	Motorola Inc. Space & Systems Tech. Group	Scottsdale, AZ	8
34860	Litton Systems Inc. Laser Systems Div.	Apopka, FL	8

Appendix B. Contracts With Same Repair Facility (Category A)

Repair CAGE	Name	Location	No. of Contracts
19062	Essex Cryogenics of Missouri Inc.	Saint Louis, MO	8
99313	Communications and Power Industries Microwave Power Tube Products	Palo Alto, CA	8
58880	Meggit Avionics Inc.	Manchester, NH	8
5D172	Litton Systems Inc. Guidance & Control Sys.	Salt Lake City, UT	8
12868	Behlman Electronics Inc. Military Div.	Hauppauge, NY	8
59885	Rosemount Aerospace Inc.	Burnsville, MN	8
58320	National Airmotive Corp.	Oakland, CA	8
50958	Richard Wolf Medical Instruments Corp.	Vernon Hills, IL	7
30715	Sabreliner Corp.	Neosho, MO	7
7Y193	Raytheon Co. Equipment Development Lab.	Marlborough, MA	7
31160	Datum Inc. Bancomm-Timing Div.	Irvine, CA	7
12338	Sunair Electronics Inc.	Fort Lauderdale, FL	7
09384	Sensortronics Inc. CEC Vibrations Products	Covina, CA	7
04971	Rantec Microwave and Electronics Inc.	Calabasas, CA	7
28009	Metrum Inc.	Littleton, CO	7
95270	Skurka Engineering Co.	Camarillo, CA	7
8U543	Lockheed Martin Corp.	Johnson City, NY	7
09062	Signal Technology Corp. Kaltec Operations	Ft. Walton Beach, FL	7
0W6H7	Medial Components	Laguna Niguel, CA	7
34984	Data General Corp.	Westborough, MA	7
86360	Fairchild Space and Defense Corp.	Germantown, MD	7
12909	Cardion Inc.	Woodbury, NY	7
58900	Giga-Tronics Inc.	San Ramon, CA	7
03640	Lockheed Martin Federal Systems Inc.	Owego, NY	7
07421	Interstate Electronics Corp.	Anaheim, CA	7
72121	Vickers Inc. Electromechanical Div.	Los Angeles, CA	7
83311	Simmonds Precision Engine Systems Inc.	Norwich, NY	6
27338	ST Microwave Corp.	Sunnyvale, CA	6
27914	AlliedSignal Inc. Air Transport Avionics	Fort Lauderdale, FL	6
33875	Raytheon E-Systems Inc.	Richardson, TX	6
2J622	SCI Technology Inc., sub of SCI Systems Inc.	Huntsville, AL	6

Repair CAGE	Name	Location	No. of Contracts
00752	AIL Systems Inc., sub of Eaton Corp.	Deer Park, NY	6
81039	GEC-Marconi Aerospace Inc.	Whippany, NJ	6
83298	AlliedSignal Inc. Aerospace Equipment Sys.	Eatontown, NJ	6
05157	Cohu Inc. Electronics Div.	San Diego, CA	6
81982	Crane Co. Hydro-Aire Div.	Burbank, CA	6
07639	Leland Electrosystems Inc.	Vandalia, OH	6
82152	Datron/Transco Inc.	Simi Valley, CA	6
19710	MPC Products Corp.	Skokie, IL	6
20886	Encore Computer Corp.	Fort Lauderdale, FL	6
15309	A and M Instrument Inc.	Manchester, NH	6
0K1Y3	Data General Corp.	Southborough, MA	6
96124	HR Textron Inc. Apco Div.	Pacoima, CA	6
94756	Boeing North American Inc. Autonetics and Missile Systems Div.	Anaheim, CA	6
24930	ITT Industries Inc. ITT Gilfillan Div.	Van Nuys, CA	6
0B6J0	Lockheed Martin/ROLM MIL-SPEC Corp.	San Jose, CA	6
51663	Crane Co. Lear Romec Div.	Elyria, OH	5
10112	Vernitron Corp. Motion Control Group	San Ysidro, CA	5
50027	Flightline Electronics Inc.	Fishers, NY	5
94144	Raytheon Co. Missile Systems Div.	Quincy, MA	5
17981	SCI Systems Inc.	Huntsville, AL	5
17863	Litton Systems Inc. Guid. and Control Sys.	Northridge, CA	5
05606	Lockheed Martin Corp., Lockheed Martin Armament Systems	Burlington, VT	5
07148	Dynamic Controls HS Inc.	Windsor Locks, CT	5
10138	Astronautics Corp. of America	Milwaukee, WI	5
99251	Litton Systems Inc. Life Support Div.	Davenport, IA	5
12511	Simmonds Precision Products Inc.	Cedar Knolls, NJ	5
12339	Metric Systems Corp.	Ft. Walton Beach, FL	5
66948	Harris Corp. Govt. Communication Sys. Div.	Melbourne, FL	5
6V542	Prime Time Clock Shop	Ozark, AL	5
11243	Cosmodyne Inc.	Torrance, CA	5

Appendix B. Contracts With Same Repair Facility (Category A)

Repair CAGE	Name	Location	No. of Contracts
04984	Space Corp. Div. of Marmon Motor Co.	Garland, TX	5
04320	IMC Magnetics Corp. Arizona Div.	Tempe, AZ	5
56348	Litton Systems Inc. Solid State Div.	Santa Clara, CA	5
54779	Science Applications Intl. Corp. SAI Tech.	San Diego, CA	5
09087	INFODEX	Wolcott, CT	5
99207	General Electric Co. Aircraft Eng. Bus. Grp.	Lynn, MA	5
1K426	Litton Systems Inc. Litton Special Devices	Springfield, PA	5
20418	Systems and Electronics Inc. Electronic Sys.	Saint Louis, MO	5
24113	General Electric Co. Aviation Service Strotherof Aviation	Arkansas City, KS	5
09523	Parker-Hannifin Corp. Aerospace Group	Andover, OH	5
25500	Lockheed Martin Tactical Systems Inc.	Akron, OH	5
98810	Aerosonic Corp.	Clearwater, FL	5

Appendix C. Contracts for Repair of Items Supplied by Same Contractor (Category B)

The following table shows the number of contracts per CAGE code with at least three contracts. For example, the first line of the table indicates that the data files contain 86 contracts with CAGE "0Y0A6," which were for the repair of items supplied by the same contractor and being repaired by that supplier or another CAGE code in this category.

Repair CAGE	Name	Location	No. of Contracts
0Y0A6	Event Systems Support LLC	San Francisco, CA	86
2B971	Chromalloy Gas Turbine Corp.	Oklahoma City, OK	27
02750	Eaton Corp. Pressure Sensors Div.	Bethel, CT	25
17475	Gulf Aerospace Inc.	Oldsmar, FL	21
55070	Lucas Aerospace Inc.	Englewood, NJ	20
12763	Dynalec Corp.	Sodus, NY	20
8N802	United Technologies Corp.	East Hartford, CT	18
33827	GEC-Marconi Avionics Inc.	Norcross, GA	18
40089	Independent Technology Service Inc.	Simi Valley, CA	14
32324	Pacific Electronic Enterprises Inc.	Huntington Beach, CA	14
81755	Lockheed Martin Corp.	Fort Worth, TX	14
35012	Smiths Industries	Clearwater, FL	13
07618	La Barge Inc. Electronics Div.	Tulsa, OK	12
5D832	Raytheon Service Co.	Irvine, CA	12
36659	Lockheed Aeronautical Sys. Co.	Burbank, CA	11
94404	Raytheon Co. Submarine Signal Div.	Portsmouth, RI	11
26916	Northrop Grumman Corp.	Rolling Meadows, IL	11
11263	Orbit Instrument Corp.	Hauppauge, NY	10
43999	Boeing North American Inc.	Seal Beach, CA	10
5W432	California Tube Laboratory	Santa Cruz, CA	10
8T088	Turbine Controls Inc.	Bloomfield, CT	9
0ZB13	Pratt and Whitney San Antonio Inc.	San Antonio, TX	9

Appendix C. Contracts for Repair of Items Supplied by Same Contractor (Category B)

Repair CAGE	Name	Location	No. of Contracts
09344	Kaiser Electronics	San Jose, CA	9
82577	Hughes Aircraft Co.	Los Angeles, CA	8
0ZE05	Leica Inc.	Torrance, CA	8
89305	Simmonds Precision Products Inc.	Vergennes, VT	8
2L671	The Gyro House	Auburn, CA	7
28287	Teltron Technologies Inc.	Birdsboro, PA	7
62860	Penn Detroit Diesel Allison Inc.	York Haven, PA	7
9S850	Logistics Services Intl. Inc.	Jacksonville, FL	6
28199	Henschel Inc.	Newburyport, MA	6
03956	Sperry Marine Inc.	Charlottesville, VA	6
7R034	Diesel Injection Sales and Service Inc.	Corpus Christi, TX	6
0KA66	Trans Met Inc.	Cibolo, TX	6
51025	Amplifier Acquisition Corp.	Newbury Park, CA	6
15755	Abbott Electronics Inc.	Los Angeles, CA	6
4X685	Hewlett-Packard Co.	Mountain View, CA	6
9R328	Reliance Electric Industrial Co.	Philadelphia, PA	5
2A860	Johnson and Towers Baltimore Inc.	Baltimore, MD	5
0GCL4	Chrysler Technologies Airborne Sys. Inc.	Waco, TX	5
05869	Hughes Aircraft Co. Naval & Maritime Sys.	Fullerton, CA	5
07217	AlliedSignal Aerospace Canada	Etobicoke, ON (Can.)	5
0C916	Precision Bearing Center Div. of MPB Corp.	West Lebanon, NH	5
058R3	Smiths Industries Aerospace & Defense Sys.	Clearwater, FL	4
44639	AAR Engine Component Services Inc.	Frankfort, NY	4
92003	Parker-Hannifin Corp.	Irvine, CA	4
74132	Nothelfer Winding Laboratories	Trenton, NJ	4
4L225	Praxair Surface Technologies Inc.	Kansas City, MO	4
16126	Tri-Industries Inc.	Terre Haute, IN	4
13619	RFI Corp. Sub of Del Electronics Corp.	Bay Shore, NY	4
99971	Lockheed Martin Corp.	Liverpool, NY	4
22624	Marianna Airmotive Corp.	Cantonment, FL	4
26101	Lamar Electro-Air Corp.	Wellington, KS	4

Appendix C. Contracts for Repair of Items Supplied by Same Contractor (Category B)

Repair CAGE	Name	Location	No. of Contracts
12536	Hughes-Treitler Mfg. Corp.	Garden City, NY	4
0USU9	Digicomp Technologies	Newbury Park, CA	4
38589	Martin-Decker Div. of Cooper Ind. Inc.	Cedar Park, TX	4
52661	United Technologies Corp.	West Palm Beach, FL	4
55974	AlliedSignal Inc.	Teterboro, NJ	4
0YJ38	Allison Engine Co. Inc.	Indianapolis, IN	3
95402	General Dynamics Corp.	Avenel, NJ	3
99380	Sierra Networks Inc. Sierracom Div.	Hopkinton, MA	3
97953	Lambda Novatronics Inc.	Pompano Beach, FL	3
89513	Grimes Aerospace Co.	Columbus, OH	3
05326	General Electric Co.	Cincinnati, OH	3
77445	United Technologies Corp.	East Hartford, CT	3
9D419	Tektronix Inc.	Gaithersburg, MD	3
0TXM0	T/MAC Inc.	New Brunswick, NJ	3
77245	Harris Corp. Government Aerospace Sys. Div.	Melbourne, FL	3
11447	Lockheed Martin Corp.	Camden, NJ	3
65888	Gallade Chemical Inc.	Santa Ana, CA	3
07395	Primus Technologies Corp.	Williamsport, PA	3
56492	Vibro-Meter Corp. Diagnostic Sys. Div.	Long Beach, CA	3
56400	Koellmann Gear Corp.	Waldwick, NJ	3
01534	Alliant Techsystems Inc.	Mukilteo, WA	3
23163	Chem-Tronics Inc. Sub of Interlake Co.	El Cajon, CA	3
04879	Arnold Magnetics Corp.	Camarillo, CA	3
0AS45	Service Motor Parts Co.	Montebello, CA	3
29732	Lockheed Martin Aerospace Corp.	Chesapeake, VA	3
55744	Decom Systems Inc.	Carlsbad, CA	3
28480	Hewlett-Packard Co. Corporate HQ	Palo Alto, CA	3
20227	Scientific-Atlanta Inc. San Diego Opns.	San Diego, CA	3
08484	Transtechnology Corp. Breeze-Eastern Div.	Union, NJ	3
52088	Lockheed Martin Federal Systems Inc.	Manassas, VA	3
4G316	ED Technologies Inc.	San Antonio, TX	3

Appendix C. Contracts for Repair of Items Supplied by Same Contractor (Category B)

Repair CAGE	Name	Location	No. of Contracts
09205	Lockheed Martin Aerospace Corp.	Rancho Santa Margarita, CA	3
30782	Litton Systems Inc. Aero Products Div.	Woodland Hills, CA	3
19059	Datametrics Technology Systems Corp.	Woodland Hills, CA	3
24039	Varo Inc. Electronic Systems Div.	Garland, TX	3

Appendix D. Federal Supply Classes With Similar Items (Category C)

For the 3,548 NSNs in Category C, the following table shows each FSC having 10 or more NSNs.

FSC No.	Description	No. of NSNs
5998	Electrical and Electronic Assemblies; Boards, Cards, and Associated Hardware	729
5999	Miscellaneous Electrical and Electronic Components	196
7025	ADP Input/Output and Storage Devices	188
6130	Converters, Electrical, Nonrotating	165
5895	Miscellaneous Communication Equipment	145
4320	Power and Hand Pumps	119
4820	Valves, Nonpowered	100
6625	Electrical and Electronic Properties Measuring and Testing Instruments	80
1560	Airframe Structural Components	71
4920	Aircraft Maintenance and Repair Shop Specialized Equipment	68
1377	Cartridge and Propellant Actuated Devices and Components	49
1680	Miscellaneous Aircraft Accessories and Components	48
5820	Radio and Television Communications Equipment, Except Airborne	46
4810	Valves, Powered	46
5845	Underwater Sound Equipment	45
5985	Antennas, Waveguides, and Related Equipment	45
5865	Electronic Countermeasures, Counter-Countermeasures and Quick Reaction Capability	39
7021	ADP Central Processing Unit (CPU, Computer), Digital	39
6650	Optical Instruments, Test Equipment, Components and Accessories	38
1430	Guided Missile Remote Control Systems	38
6110	Electrical Control Equipment	34
6685	Pressure, Temperature, and Humidity Measuring and Controlling Instruments	34
3120	Bearings, Plain, Unmounted	32
2915	Engine Fuel System Components, Aircraft	31
1650	Aircraft Hydraulic, Vacuum, and De-icing System Components	30
5840	Radar Equipment, Except Airborne	29
4310	Compressors and Vacuum Pumps	28
1270	Aircraft Gunnery Fire Control Components	28
6150	Miscellaneous Electrical Power and Distribution Equipment	27
2835	Gas Turbines and Jet Engines, Except Aircraft; and Components	24
1285	Fire Control Radar Equipment, Except Airborne	24
6105	Motors, Electrical	23
2825	Steam Turbines and Components	23

Appendix D. Federal Supply Classes With Similar Items (Category C)

FSC No.	Description	No. of NSNs
6605	Navigational Instruments	23
6610	Flight Instruments	22
6115	Generators and Generator Sets, Electrical	19
1190	Specialized Test and Handling Equipment, Nuclear-Ordnance	19
1420	Guided Missile Components	19
5841	Radar Equipment, Airborne	19
5963	Electronic Modules	18
2010	Ship and Boat Propulsion Components	17
3110	Bearings, Antifriction, Unmounted	16
6660	Meteorological Instruments and Apparatus	16
3655	Gas Generating and Dispensing Systems, Fixed or Mobile	15
5960	Electron Tubes and Associated Hardware	15
3040	Miscellaneous Power Transmission Equipment	15
2910	Engine Fuel System Components, Non-Aircraft	15
5925	Circuit Breakers	14
6695	Combination and Miscellaneous Instruments	14
2040	Marine Hardware and Hull Items	14
5915	Filters and Networks	14
5996	Amplifier Assembly/Subassembly and Various Components	13
6930	Operation Training Devices	13
1240	Optical Sighting and Ranging Equipment	13
5995	Cable, Cord, and Wire Assemblies: Communication Equipment	13
2815	Diesel Engines and Components	13
5835	Sound Recording and Reproducing Equipment	13
1440	Launchers, Guided Missile	13
1660	Aircraft Air Conditioning, Heating, and Pressurizing Equipment	12
5955	Oscillators and Piezoelectric Crystals	12
1115	Nuclear Warheads and Warhead Sections	12
2990	Miscellaneous Engine Accessories, Non-Aircraft	12
2840	Gas Turbine and Jet Engines, Aircraft; and Components	12
5330	Packing and Gasket Materials	11
4140	Fans, Air Circulators, and Blower Equipment	10
1135	Fusing and Firing Devices, Nuclear Ordnance	10
3010	Torque Converters and Speed Changers	10
6680	Liquid and Gas Flow, Liquid Level, and Mechanical Motion Measuring Instruments	10
5805	Telephone and Telegraph Equipment	10
6920	Armament Training Devices	10
5975	Electrical Hardware and Supplies	10

Appendix E. Definitions of Key Terms

Contract Administration	Contract administration refers to the wide variety of accounting, clerical, engineering, and legal functions necessary for successful execution of awarded contracts. Specific functions include corrections of errors or omissions, cost analyses, engineering surveillance to ensure compliance with contract specifications (such as cost, schedule, or technical performance), processing and approval of payments, and review of reporting requirements.
Contract Maintenance	Any maintenance performed under contract by a commercial organization, including original manufacturer.
Depot Maintenance	Maintenance performed by designated depot maintenance activities using more extensive shop facilities and equipment, as well as personnel of higher technical skills, than at lower levels of maintenance (organizational and intermediate). Depot maintenance normally consists of inspection, test, repair, modification, alteration, modernization, conversion, and rebuilding of parts on assemblies, subassemblies, components, equipment end items, and weapon systems.
Inter-Service	Involving more than one Service.
Intra-Service	Involving more than one activity but within the same Service.
Joint Contracting	Maintenance performed by a contractor for more than one DoD component under one contract that is administered by one component.
Organic Maintenance	Maintenance performed by a military department under military control using Government-owned or controlled facilities, repair parts, spares, test equipment, tools, and civil service and military personnel.
Secondary Items	Reparable components, minor end items, and repair parts.

Appendix F. Report Distribution

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Chairman and ranking minority member of each of the following Congressional committees and subcommittees:

    Senate Committee on Appropriations
    Senate Subcommittee on Defense, Committee on Appropriations
    Senate Committee on Armed Services
    Senate Committee on Governmental Affairs
    House Committee on Appropriations
    House Subcommittee on National Security, Committee on Appropriations
    House Committee on Government Reform and Oversight
    House Subcommittee on Government Management, Information, and Technology, Committee on Government Reform and Oversight
    House Subcommittee on National Security, International Affairs, and Criminal Justice, Committee on Government Reform and Oversight
    House Committee on National Security

Joint Logistics Audit Planning Group Members

Andrew Blackwell	Army Audit Agency
Barbara Cobble	Naval Audit Service
John Gannon	Office of the Assistant Inspector General for Auditing, DoD
Joseph Kahriger, Jr.	Army Audit Agency
Tilghman Schraden	Office of the Assistant Inspector General for Auditing, DoD
James Sommer	Air Force Audit Agency

Audit Team Members

The Naval Audit Service managed this joint audit and the following team members made significant contributions to this report.

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Robert Collette	Naval Audit Service
Albert Enslen	Naval Audit Service
Karen Escobedo	Army Audit Agency
Lori Hood	Naval Audit Service
Robert Jones	Army Audit Agency
Wilmer Marshall, Jr.	Army Audit Agency
Debra Calhoun-Ross	Office of the Assistant Inspector General for Auditing, DoD
Ronald Stach	Air Force Audit Agency
CDR Robert Szabo	Office of the Assistant Inspector General for Auditing, DoD
Margaret Uckert	Naval Audit Service